

REMARKS

Applicants respectfully request reconsideration of the present application in view of the reasons that follow.

No claims are being amended. Claims 15-29 remain pending in this application.

Rejections under 35 U.S.C. § 103

Claims 15, 16, 24 and 27-29 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Published Patent Application 2003/0113249 to Hepburn et al. ("Hepburn") in view of U.S. Patent No. 6,574,956 to Moraal et al. ("Moraal"). Claims 17 and 26 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Hepburn in view of Moraal, and further in view of U.S. Patent No. 6,938,411 to Hoffmann et al. ("Hoffmann"). Claims 20-23 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Hepburn in view of Moraal, and further in view of U.S. Patent No. 6,594,990 to Kuenstler et al. ("Kuenstler"). Claims 18-19 and 25 stand rejected under § 103(a) as being unpatentable over Hepburn in view of Moraal, and further in view of legal precedent. Applicants respectfully traverse these rejections for at least the following reasons.

The device of independent claim 15 recites:

A purification device for an exhaust gas of a diesel engine, the diesel engine comprising a catalyst which traps nitrogen oxides in the exhaust gas but decreases a nitrogen oxides trapping performance when poisoned by sulfur oxides in the exhaust gas, and a filter which traps particulate matter in the exhaust gas, the device comprising:

a programmable controller programmed to:

determine if an elimination of the sulfur oxides poisoning the catalyst is required;

perform a process of eliminating the sulfur oxides poisoning the catalyst, when elimination of the sulfur oxides poisoning the catalyst has been determined to be required;

determine if a regeneration of the filter is required while performing the process of eliminating the sulfur oxides;

perform the regeneration of the filter while interrupting the process of eliminating the sulfur oxides, when the regeneration of the filter has been determined to be required;

determine during the regeneration of the filter if a residual particulate matter in the filter has decreased to a level which does not damage the filter when the residual particulate matter in the filter burns; and

stop the regeneration of the filter and resume the process of eliminating the sulfur oxides poisoning the catalyst, when the residual particulate matter in the filter has decreased to a level which does not damage the filter when the residual particulate matter in the filter burns.

Hepburn fails to disclose at least the above italicized feature of claim 15 in the context of that claim.

Hepburn discloses a routine in FIG. 4C for purging both SO_x and particulate matter from a filter 19. Hepburn discloses a total time and intermediate time for removing SO_x from the filter 19 as DSOXTIME and DSOX-CNT_PRD, respectively, and a total time and intermediate time for purging particulate matter as DPMTIME_MAX and DPMCNT_PRD, respectively (See paragraphs [0058], [0062] and [0076]). In step 274 of the routine in FIG. 4C, it is determined if the value DSOXCNT is greater than or equal to the intermediate time DSOX-CNT_PRD. If so, the total time DSOXTIME for purging is incremented in step 276 followed by removal of particulate matter in step 278.

Hepburn, however, does not disclose as recited in claim 15, a programmable controller programmed to “determine if a regeneration of the filter is required while performing the process of eliminating the sulfur oxides.” Rather, Hepburn discloses stopping its intermediate SO_x purge and performing particulate matter removal based on the value DSOXCNT being greater than or equal to the intermediate time DSOX-CNT_PRD. The values DSOXCNT and DSOX-CNT_PRD are values relating to the SO_x purge time, and do not represent a determination that particulate matter regeneration of the particulate matter filter is required. Thus, Hepburn does not disclose determining if the regeneration of its particulate matter filter is required while performing the process of eliminating the sulfur oxides, as recited in claim 15, and claim 15 is patentable thereover for at least this reason.

The remaining references applied in the rejections of the claims were cited for other features of the claims, but fail to cure the deficiencies of Hepburn.

Independent claims 27 and 28 respectively recite “means for determining if a regeneration of the filter is required while performing the process of eliminating the sulfur oxides” and “determining if a regeneration of the filter is required while performing the process of eliminating of the sulfur oxides”, and are patentable over Hepburn for reasons analogous to claim 15.

The dependent claims are patentable for at least the same reasons as claim 15, from which they depend either directly or indirectly, as well as for further patentable features recited therein.

Applicants believe that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check or credit card payment form being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicants hereby petition for such extension under 37 C.F.R. §1.136 and authorize payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

Date December 21, 2007

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